

REMARKS/ARGUMENTS

Favorable reconsideration of the present application is respectfully requested.

Claims 1 and 4 have been amended to clarify that the inert gas substitution means eliminates the hydrogen fluoride gas remaining in at the least part of the line which is located downstream of the first automatic valve and upstream of the hydrogen fluoride gas inlet. Basis for this is believed to be clearly evident from the description, particularly Figs. 3a-3c. New Claim 6 corresponds to Claim 4 except for the last line, which recites substituting an inert gas in case the first automatic valve is closed. New Claims 7-9 correspond to Claims 2, 3 and 5, but depend from Claim 6.

As was explained in the last response, in the case of a fluorine gas generator having a hydrogen fluoride (HF) gas feed line with an automatic valve disposed therein for interrupting the HF gas feeding, the closure of the automatic valve can create a negative pressure downstream of the valve, possibly resulting in an inflow of the electrolytic bath into the HF feed line, and clogging of the feed line due to solidification of the bath. The present invention therefore provides an inert gas substitution means for eliminating the hydrogen fluoride gas remaining in the HF gas feed line on a side downstream from the automatic valve, and substituting an inert gas therefor, e.g., the inert gas feed line 91, inert gas storage tank 92, and automatic valves 73 and 74. As a result, the inert gas fed from the inert gas storage tank 92 at a constant pressure is fed from the upstream side of the connection between the HF feed line 24 and the inert gas feed line 91 into the HF feed line 24 on the side downstream from the first automatic valve 81, and the HF gas on the side downstream of the first automatic valve 81 is replaced by inert gas.

Claims 1-5 were newly rejected under 35 U.S.C. §103 as being obvious over Tojo et al, as representative of the disclosure of WO01/77412, in view of U.S. patent publication 2001/0051128 (Hoffman et al). According to the Office Action, it would have been obvious

to have used the HF supply structure in Fig. 3 of Hoffman et al in place of that in Tojo et al.

It is respectfully submitted, however, that even in this case the claims would define over the prior art.

Tojo et al discloses a fluorine gas generator including an electrolytic bath 3, wherein hydrogen fluoride (HF) gas is fed via a HF feed line (unnumbered) terminating in the bath 3 at an HF feed port 26 (column 10, lines 24-27 and 44-48). The purge gas from the purge gas cylinder 18, on the other hand, is fed to the bath via the inlet port 15 and 17 which are independent of the HF feed line. Therefore, the purge gas can only reach the HF feed line via the bath 3, in which case it may be contaminated with mist from the bath, which may cause corrosion.

In contrast, Claims 1 and 4 now clarify that the “inert gas substitution means” is provided for eliminating the hydrogen fluoride gas remaining in at least the part of the HF feed line located downstream of the first automatic valve and upstream of the hydrogen fluoride gas inlet. This is a means plus function limitation. The structure disclosed in the specification as corresponding to this “means” includes the inert gas feed line 91 which connects directly to the HF feed line, i.e., not indirectly via the bath, and equivalent structures must also connect directly to the HF feed line.

According to the Office Action, it would have been obvious in view of Hoffman et al to have included a valve in the HF feed line of Tojo et al. However, even if that were true, the resulting structure still would not satisfy the amended claims since the inert gas substitution structure 15, 17, 18 of Tojo et al feeds purge gas to the bath via the inlet ports which are independent of the HF feed line. Accordingly, Tojo et al lacks “inert gas substitution means for eliminating the hydrogen fluoride gas remaining in at least part of said line on the side downstream from said first automatic valve on said hydrogen fluoride gas feed line, which part is located downstream of said first automatic valve and upstream of said

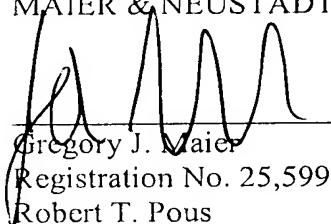
hydrogen fluoride gas inlet," using structure equivalent to that disclosed in the present specification, i.e., in which the inert gas line connects directly to the HF feed line.

Claim 2 further recites that the inert gas substitution means comprises a detecting means for detecting interruption of feeding of the hydrogen fluoride gas, an inert gas feed line for feeding the inert gas to said hydrogen fluoride gas feed line on the side downstream from said first automatic valve, and a second automatic valve disposed on said inert gas feed line and operated in association with said detecting means to feed the inert gas into said line on the side downstream from said first automatic valve on said hydrogen fluoride gas feed line. The valves 62 of Tojo et al cannot comprise this second automatic valve since it is not in the HF feed line, and so the additional features of dependent Claim 2 also are not taught in the prior art.

Applicants believe that the present application is in a condition for allowance and respectfully solicit an early notice of allowability.

Respectfully submitted,

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